IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Title of Application: Apparatus for Molding Brick and Paver	)	
Applicant Name: Henderson, James M.	)	
Application Serial No: 09/982,170	)	Group Art Unit 1722
Application Filing Date: 10/18/2001	)	Examiner: Nguyen, T.
Attorney Name: Donna J. Russell	)	

RESPONSE TO OFFICE ACTION MAILED ON JUNE 17, 2003

The Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Applicant, James M. Henderson, is responding to the rejection of claims 1-13 in the Office Action mailed June 27, 2003. Applicant herewith petitions the Commissioner of Patents and Trademarks to extend the time for reply to the Office Action for three (3) months, from September 17, 2003 to December 17, 2003. Accompanying this response and petition is a fee transmittal sheet and credit card payment form for the required fee under 37 CFR 1.17(a)(3).

Applicant also requests continued examination of the application under 37 CFR 1.114, and the fee transmittal sheet and credit card payment form indicate payment of the required fee under 37 CFR 1.17(e).

Claims 1-13 are pending in the application and Claims 1-13 were rejected under 35 USC Section 103(a). Applicant respectfully traverses the Examiner's rejections.

Response

Claim Rejections – 35 USC Section 103(a)

Claims 1-13 have again been rejected by the Examiner under 35 USC Section 103(a) as being unpatentable over Ottman (4,153,404), in view of Smith (2,537,920). The Examiner is correct in stating that Ottman fails to disclose an apparatus with an indexing plate and a mixing means. However, the Examiner also states that he "strongly believes that the apron plate 33 [of the Smith patent], for transporting the formed blocks, is the same or equivalent to the indexing plate"

Applicant respectfully disagrees, as "indexing conveyors" are different from "apron conveyors," and "indexing plates" are different from "aprons" in manufacturing technology. To someone of skill in the art of brick-forming or brick-making, "indexing" refers to "predetermined incremental movements." (See U.S. Patent No. 6,540,502 (issued to Butler on April 1, 2003), Abstract line 2.) U.S. Patent No. 6,164,437, issued to Brown, *et al.* on December 26, 2000, describes an indexing drive for a forming device with an arcuate path, the movement produced by the drive producing a "discrete amount of rotation" causing a "predetermined amount of rotation."

Indexing conveyors, for example, are used where containers must be positioned for filling. Such devices can be found in soft drink manufacturing facilities, carton-filling facilities, and other manufacturing facilities where packages must be filled with a predetermined quantity of product before they are sealed. (http://www.spee-dee.com/vfconveyors.html.) These conveyors move the packaging intermittently, at discrete intervals so that they can be positioned in the appropriate place for filling. Indexing conveyors are distinct from apron conveyors (See p. 8-48 and 8-49, Standard Handbook of Plant Engineering, Rosaler, R., McGraw-Hill Book Company, 1983; http://www.gpc64.dial.pipex.com/48.htm.)

The Butler patent, which issued over a year after the present application was filed, teaches the use of an indexing conveyor for forming bricks that are similar in appearance to "hand-made" brick. In the present invention, the bricks or pavers are formed by use of two rams, so that the compression provided by the apparatus of the present invention can produce bricks or pavers that are more dense (a desirable attribute of these products). The indexing means of the present invention, or indexing plate, is a device that collects

the formed bricks in predetermined numbers and, having "indexed," or moved at predetermined intervals to receive each individual brick in a batch, removes the bricks or pavers so that they can, for example, be strapped. (Strapping involves wrapping a metal or plastic band around a group of bricks or pavers so that they can be more easily transported.)

In Smith's '920 patent, the apron 33 in Fig. 4 clearly comprises a non-moving, non-indexing surface upon which bricks are pushed at the end of the forming process. However, no device is illustrated or described for removing these bricks from the apron. Applicant has provided a definition from the Dictionary of Technical Terms, (Crispin, Bruce Publishing Co. 1961, p. 19) that describes an apron as:

> [1.] A hard-surface area of considerable extent immediately in front of the entrance of a hangar or aircraft shelter which is used for the handling of aircraft or for repair in clear weather. [2.] A plain or molded piece of finish below the stool of a window, put on to cover the rough edge of the plastering. [3.] That board immediately under the top of a table, which fastened the legs together, gives support to the top, and improves the appearance of the table; the width of the board or strip is used vertically. [4] The vertical plate in the front part of the carriage of a screw-cutting lathe to which the split nut is attached.

None of these definitions describes a device or component of a device that is, by definition, designed to produce intermittent discrete movement. The apron of Smith is a horizontal surface at the end of the brick-making device. Bricks deposited there must be moved from there by manual means. If not removed continuously, the machine must be stopped, since the formed bricks will accumulate on the apron. In the present invention, the indexing plate is a device that, by definition, moves a predetermined distance to collect each individual brick in a batch of predetermined number. Once the requisite number of bricks is received, it removes the bricks or pavers so that the machine can be operated continuously and the formed product can be further processed, as needed, with the bricks in alignment. Indexing can be used, for example, to allow holes in bricks to be

aligned and allows for placement of a prestressing bar after the bricks have been placed, etc. ("Prestressed Clay Brick Walls," http://www.cir.unomaha.edu/publications/advancements/claywall1.htm.)

Like Ottman, Smith does not disclose an indexing plate. Therefore, the combination of references does not provide the requisite teaching, suggestion, or motivation to combine the elements of the invention. As Applicant stated previously and the Examiner is aware, for an invention to be obvious, there must be some teaching, suggestion, or motivation in the prior art to combine the elements of the invention. C.R. Bard Inc. v. M3 Sys. Inc., 157 F.3d 1340, 48 USPQ2d 1225 (Fed. Cir. 1998), In re Geiger, 815 F.2d 686, 2 USPQ2d 1276 (Fed. Cir. 1986).

By providing a mixer in conjunction with the elements to form brick using compression along a single axis in two directions, Applicant has overcome the need for steam curing that currently exists in the brick-molding machines of the art. This decreases both cost and production time, which has been a goal for the industry for some time. As the Examiner is aware, a long-felt need in the art is an element of the Graham test for non-obviousness. Graham v. John Deere Co. 383 U.S. 1, 148 USPQ 459 (1966). Applicant has met this test by providing an apparatus that provides a manufacturing process that does, indeed, reduce both cost and production time while still producing a product that exceeds relevant strength and absorption requirements. Applicant's invention also makes possible continuous operation of a brick-making apparatus which can form compressed brick, as the indexing plate allows the brick to be removed and packaged at a continuous rate. The invention meets the requirements for patentability under 35 USC §103.

The Examiner correctly stated that the claims are apparatus claims and not method claims, citing Applicant's statement that none of the references "teaches the use of an indexing plate or mixing means as disclosed in the present invention." Applicant respectfully acknowledges that the present claims do not recite a method of use. The language chosen by Applicant was intended to convey the message that the indexing plate or mixing means was used in, or a part of, the invention. This choice of words was

not intended to convey the impression that Applicant was referring to a method of use, and Applicant respectfully apologizes for the confusion this choice of words caused.

Applicant respectfully requests that the Examiner place claims 1-13 in condition for allowance.

Respectfully submitted,

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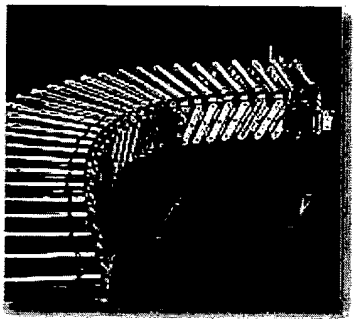

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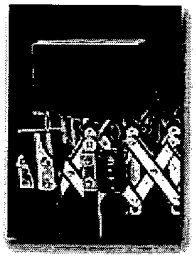
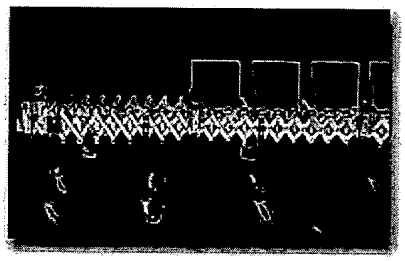
ELECTRONIC PACKAGE STOP OPTION.



SuperOptics serves as an electronic package stop to prevent cartons from falling off the end of the conveyor. When a carton gets to the discharge end of the conveyor it automatically stops. when the carton is removed from the conveyor bed, the conveyor starts again to bring the next carton into position.

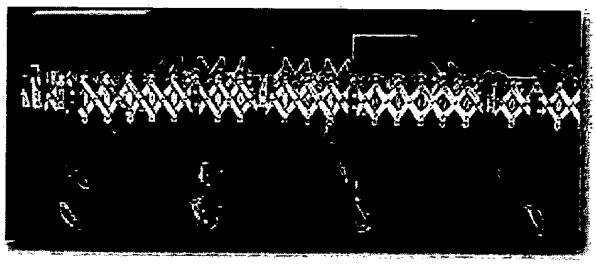
INDEXING OPTION



Super Optics can also be set up to provide indexing. This feature lets you electronically control the space between cartons for easier handling and bar code reading. With indexing, your carton move a pre-determined distance then the entire conveyor stops. When you add more cartons the entire conveyor starts and stops as a total unit to gradually move the lead carton towards the discharge end. When you finish loading the conveyor you can over ride the indexing feature to move all of the cartons to the discharge end.

ZERO-PRESSURE ACUUMULATION OPTION

SuperOptics can also be used to provide true zero-pressure accumulation. With this feature, when you place a carton on the conveyor it moves directly to the discharge end without stopping until it reaches the electronic package stop. As you place more cartons on the in-feed end they move all the way to the discharge end and stop. Unlike indexing, with zero-



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cont

Other Specialty Conveyors

There are innumerable variations on standard conveying systems, some of which are unique to individual industries. Six common examples are described below.

Screw Conveyor. This conveyor (Fig. 3-13) consists of a screw rotating in a stationary trough and the material moving along its length by rotation of the screw. This type of conveyor serves a dual purpose since it can also be used to perform processes such as blending and mixing of material while the material is being moved. The conveyor is generally enclosed to prevent dust or fumes from escaping and allow the conveyor to be cooled or heated. Loading or discharging can be located at any point along a conveyor.

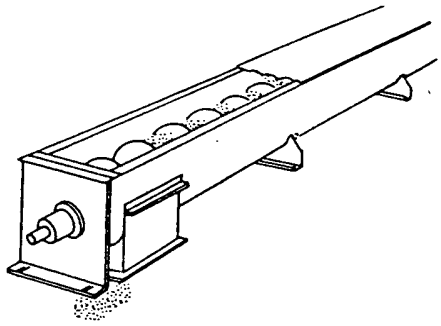


Figure 3-13 Screw conveyor.

Spiral Track Conveyors. These conveyors (Fig. 3-14) consist of a continuous spiral track with a power drive which turns the track, moving anything which is hung on it. It has wide application in the garment industry. It is generally used for items weighing less than 10 lb (5 kg). Interlocking nylon wafers can permit turns to be made in any direction on a radius of 18 in (46 cm).

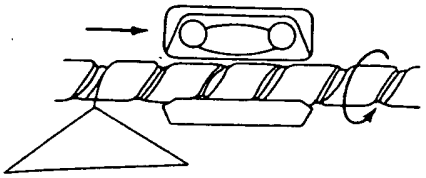


Figure 3-14 Spiral track conveyor.

Oscillating and Vibrating Conveyors. These use the natural frequency vibration of a trough to provide a conveying action to move material. Oscillating conveyors use a mechanically driven power train to move a trough carrying material against spring supports which provide a fast return and downward stroke, causing the trough to vibrate and convey the material. Vibrating conveyors utilize some form of magnetic pulsation to create this vibration motion. Wider variations of frequency are possible by simple control for vibrating conveyors, enabling speed changes compensating for material differences.

Application of both types of conveyors is growing in a number of different industries for uses such as: conveying light food products such as cereal in the food industry; moving, cooling, and breaking up lumps of casting sand in foundries; quenching and removal of glass cullet in water-filled troughs in the glass industry; removing ferrous from nonferrous materials in separation systems; and feeding small parts into automatic packaging or assembly equipment.

Flight Conveyors. These conveyors (Fig. 3-15) use scraper plates to push nonabrasive bulk material through a trough which can be horizontal or inclined.

Apron Conveyors. These conveyors (Fig. 3-16) use a series of interlocking apron pans supported in a stationary frame for conveying materials that are heavy, abrasive and lumpy, such as ore, stone, industrial refuse, and waste materials.

Pneumatic Tubes. These use a pressure or vacuum system to move materials or a container at relatively high speed. The major application is that of an internal mail carrier, although it can also be used to move certain types of high-volume fine particulate.

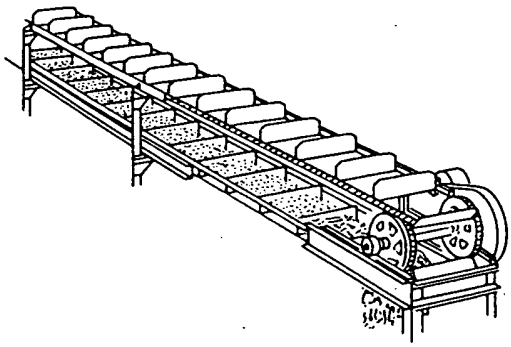


Figure 3-15 Flight conveyor.

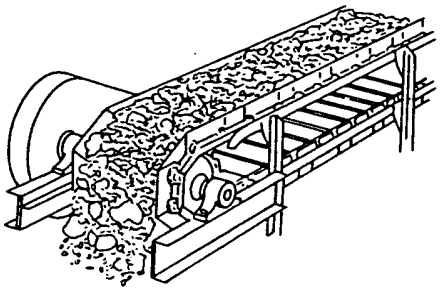


Figure 3-16 Apron conveyor.

SORTING, CONSOLIDATING, AND DIVERTING DEVICES

A materials handling system must frequently have the ability at some point to identify, sort, and divert parts, products, or unit loads. Peripheral accessories and equipment do this, ranging from simple mechanical diverters to sophisticated optical recognition reading devices, which can actually read and identify alphanumeric characters and sort 20,000 items per hour and which are used mainly for check and mail handling. Whatever the complexity of the system, three basic elements must be considered: identification of the item to be sorted or consolidated, recognition of the item, and the command to activate the mechanisms to divert the item.

Simple Mechanical Sorting

Simple mechanical sorting utilizes inherent differences such as size, shape, weight, or other physical differences to identify or recognize items; it generally is contact sorting in which an item must make contact with a channel or feeler guides or discerns physical differences and contacts a cam or other simple mechanism to activate a diverter chute or other diverting device.

Diverting Mechanisms

Diverting mechanisms can be grouped into devices that deflect, push off, drive off, or tilt; many variations are included within each group (Fig. 3-17).

Electromechanical Sorting

Electromechanical sorting uses noncontacting identification devices that can sense both inherent differences and applied differences. These are identified on the load or package

Research Advancements

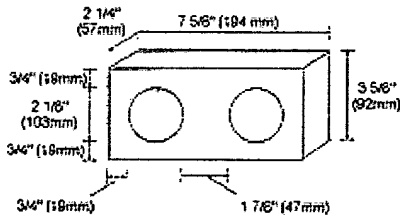
Prestressed Clay Brick Walls

Current methods of constructing brick masonry veneer walls use steel stud backup walls attached to the brick veneer with metal ties. This system has problems with masonry cracking due to the differences in the relative stiffnesses of the steel studs and the brick wall. A new system eliminates the connecting ties between the brick veneer wall and the steel studs of the current system. The new prestressed system enhances the structural efficiency and performance of these walls. The prestressed brick wall is economical and easy to construct.

Background

Masonry is the most popular construction material in the United States due to its strength, versatility, and aesthetically pleasing appearance. Clay brick masonry is most often specified as a veneer wall to provide an aesthetic facade for a building.

Current methods of constructing brick masonry veneer walls use steel backup walls attached to the brick veneer with metal ties. There are known problems with this type of system due to disparities in stiffness between the clay brick and the metal stud gridwork. These differences in stiffness result in cracking in the brick facade, allowing water to penetrate the system.



Objective

The objective of this project is to improve the structural performance of clay brick masonry veneer wall systems by using prestressing technology. The new system would be simple to install and economically competitive with existing systems.

Approach

New two-core bricks were developed for this project. They require no new technology or equipment to manufacture, and they were produced by a local brick manufacturer during a normal day's production.

The cores are symmetrically spaced to provide for indexing of the holes when the bricks are stacked in a running bond pattern using a standard 3/8-in. (9.5 mm) head joint. The indexing allows for placement of a prestressing bar after the bricks have been placed.

Type N mortar was selected for the test panels. Compression tests were conducted

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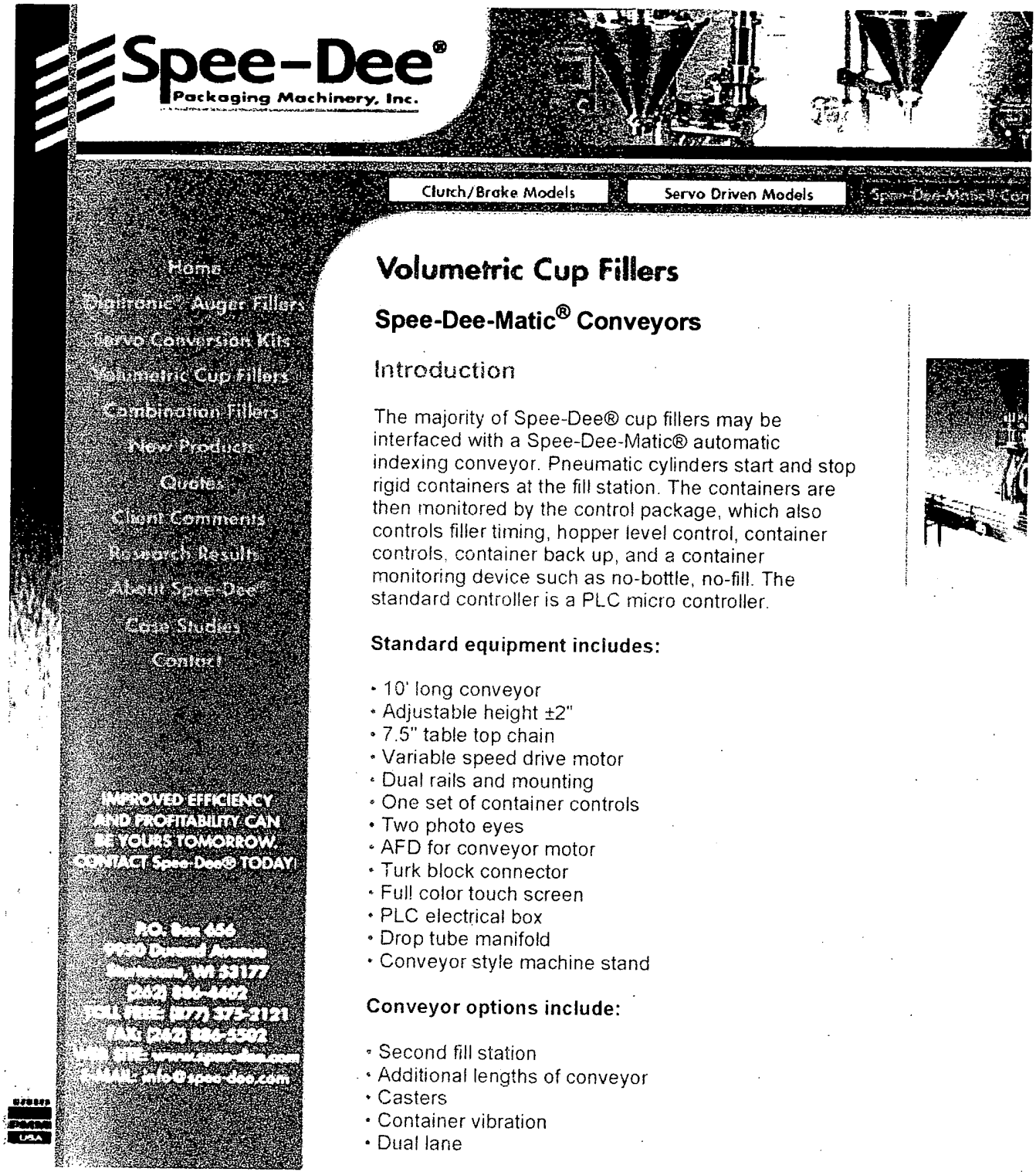

Volumetric Cup Fillers

Spee-Dee-Matic® Conveyors

Introduction

The majority of Spee-Dee® cup fillers may be interfaced with a Spee-Dee-Matic® automatic indexing conveyor. Pneumatic cylinders start and stop rigid containers at the fill station. The containers are then monitored by the control package, which also controls filler timing, hopper level control, container controls, container back up, and a container monitoring device such as no-bottle, no-fill. The standard controller is a PLC micro controller.

Standard equipment includes:

- 10' long conveyor
- Adjustable height ±2"
- 7.5" table top chain
- Variable speed drive motor
- Dual rails and mounting
- One set of container controls
- Two photo eyes
- AFD for conveyor motor
- Turk block connector
- Full color touch screen
- PLC electrical box
- Drop tube manifold
- Conveyor style machine stand

Conveyor options include:

- Second fill station
- Additional lengths of conveyor
- Casters
- Container vibration
- Dual lane

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PREFACE

This Dictionary, for the use of student builders, electricians, and for workmen genera the purpose of assisting them in securing technical terms with which they come in dai

While many handbooks contain glossaries in their texts, the authors, in most cases, ass should be so familiar with the articles describ not be needed, and they therefore proceed wit application, instead of prefacing their rema definitions.

Definitions of many of the terms listed l any technical text nor in the average dictiona almost without exception, terms which are in United States.

No attempt has been made to include all i field of endeavor, but the purpose has been enough to give the workman that knowledg which will be extremely useful to him in the p

Philadelphia, Pa.

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(Eleventh Printing — 1961)

a part of the stationary

n opening, orifice, or
An opening through
ctronic beam can pass.
) The top or peak of a
id, or conical figure

es' flu'id meas'ure.
= 1 fluid (or liquid) dram (fl. dr.)
= 1 fluid (or liquid) ounce (fl. oz.)
= 1 pint
= 1 gallon

.M.F. (*Elec.*) Voltage
by the pressure drop
urrent passing through

ow'er (*Elec.*) In an in-
circuit, the product of
× volts (KVA) as dis-
om the true power as
wattmeter.
atts (*Elec.*) Volts times
an a.c.-current circuit.
Something appended to
nying a principal or
g, but not necessary

Print.) An addition or
o the subject matter of
ially following the last

(*Elec.*) A general term
cing of household electric
devices, such as toasters,
pers, etc.
. The act of applying;
practice; the practical
on of a principle.
-sign' (*Fine Arts*) De-
beautify or make useful
e attractive.
-chan'ics (*Phys.*) Treats

of the laws of mechanics as applied to construction in the useful arts.

ap-plied' mold'ing (*Furn.*) Molding placed to give the effect of paneling; Jacobean ornament of the seventeenth century.

ap-pren'tice. A learner in a trade. Usually one, who, by contract or indenture, is taught the rudiments of the trade during the term of the agreement.

ap-pren'tice-ship. That period of time agreed upon between employer and employee, during which the employer promises to teach the employee the rudiments of his trade In the U. S. it is usually three or four years; in many foreign countries, five years or more.

ap-proach' light (*Aero.*) A light, usually green, designed to indicate a favorable direction of approach for landing an aircraft.

ap-prox'i-mate-ly (*Mech.*) Nearly, frequently used when speaking of the capabilities of machines, their measurements, and near shipping weights.

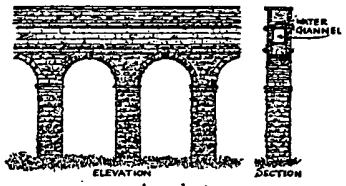
a'pron (*Aero.*) A hard-surface area of considerable extent immediately in front of the entrance of a hangar or aircraft shelter which is used for the handling of aircraft or for repair in clear weather. (*Arch.*) A plain or molded piece of finish below the stool of a window, put on to cover the rough edge of the plastering. (*Furn.*) That board immediately under the top of a table, which fastens the legs together, gives support to the top, and improves the appearance of the table; the width of the board or strip is used vertically. (*Mech.*) The vertical plate in the front part of the carriage of a screw-cutting lathe to which the split nut is attached.

apse (ăps) (*Arch.*) The altar end of a church; a recess.

aq'ua am-mo'ni-a (*Chem.*) Solution NH_4OH. Ammonium hydroxide commonly called ammonia water. Used as a household cleanser.

aq'ua dag (*Chem.*) A colloidal suspension of graphite in water.

aq'ua for'tis (*Chem.*) HNO_3. Nitric acid.



Aqueduct

aq'ue-duct (ăk'wê-dŭkt) A water conduit of channels, steel pipes, syphons, or tunnels, etc., through which a community is supplied.

a'que-ous. Watery.

ar'a-besque' (ăr'ȧ-bĕsk') (*Arch.*) An ornament, painted, inlaid, or carved in low relief, the pattern consisting of plants, fruits, and figures of men and animals interlaced in fantastic devices.


Arabesque

(*Furn.*) An ornament, painted, inlaid, or carved in the Arabian manner.

Ar'a-bic num'bers. The commonly used numerals, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, as distinguished from the Roman I, II, III, IV, etc.

ar'bor (*Arch.*) Detached lattice-work; a bower; a nook. (*Mech.*) A